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EWC3I - EWCC WORKSTATION

USER MANUAL

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1.0 INTRODUCTION

The EWC3I Workstations provide an automated command and control network for land EW stations. The EWC3I Workstations are designed to be paired with the EWCC, EWOC (Analyst), FEWOC, DF Stations and Jammer Stations.

The EWCC EWC3I Workstation provides a Tactical Map Display on which the user can record the position and parameters of the friendly EW stations and reports tools that display incoming reports and generate, display and send outgoing reports between EW Stations.

This document describes the functionality and user interface of the EWCC EWC3I Workstation.

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2.0 EWCC EWC3I WORKSTATION INTERFACE DESCRIPTION

This section describes the startup and shutdown procedures for the EWCC EWC3I Workstation (EEW) and the user interface and functionality of the EWCC Workstation Tactical Map Browser, the Reports Browser and the tasking tools for the DF Stations and Jammers.

2.1 Startup / Shutdown

This section describes the procedures to startup and shutdown the EWCC EWC3I Workstation (EEW) software. The other menu selections from the EWCC Menu are also described.

2.1.1 EEW Startup

The procedure to startup the EEW software is as follows:

1. Select the EWCC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "start Actra" menu item
3. From the sub-menu select the "start EWCC" menu item

The selection of these menu items initializes and starts the appropriate tasks of the EEW software.

2.1.2 EEW Shutdown

The procedure to conduct a controlled shutdown of the EEW tasks is as follows:

1. Select the EWCC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "shut down EWCC" menu item
3. From the sub-menu select the "shut down Actra" menu item

2.1.3 EEW Configuration Browser

The EEW Software may be configured at any time, whether the EEW is running or not. The EEW Configuration Browser allows the user to set up the EEW software with pre-set

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values required for the execution of the software. Each configurable value, displayed in the Configuration Browser, is initialized on initialization of the EEW software. These values may be changed by changing them in the Configuration Browser and saving the changes. Changes are saved by closing the browser and selecting "OK" when the prompter "Save Changes" is displayed. The class variables contain the various MEROD addresses of the EWC3I stations and the defaults settings required by the Reports Browser. The EEW Configuration Browser is shown in figure 2.1.3-1.

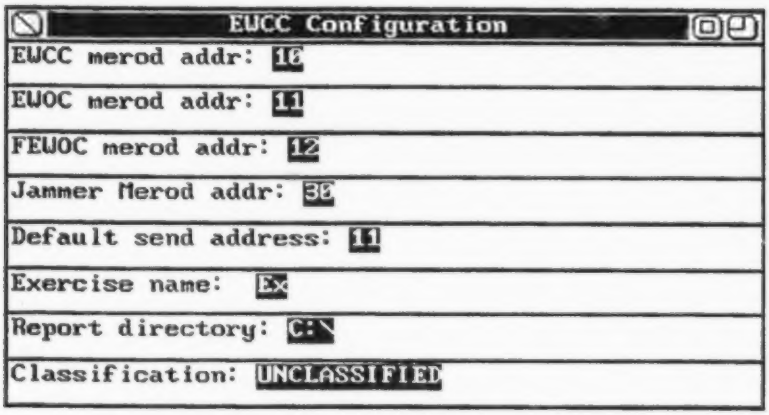

Figure 2.1.3-1
EEW Configuration Browser

2.1.4 MEROD Address Configuration Browser

The MEROD Configuration Browser is common to all of the EWC3I stations and is used to define and maintain a library of station names and corresponding MEROD addresses.

The procedure to invoke the MEROD Configuration browser is as follows:

1. Select the EWCC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "browse MEROD Station addresses" menu item

The browser is broken down into three panes; a list pane showing all of the current

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stations, an address pane and a comment pane. The address pane and comment pane show the current data of the station selected in the list pane. The MEROD Address Configuration Browser is shown in figure 2.1.4-1.

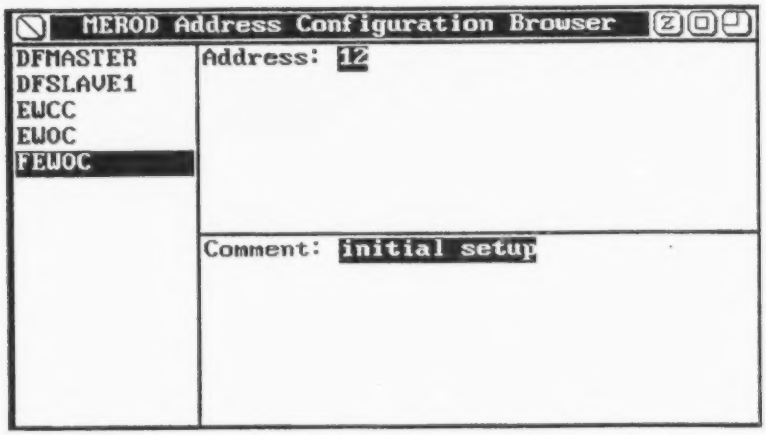

Figure 2.1.4-1
MEROD Address Configuration Browser

2.1.4.1 Adding and Deleting Stations

The menu for the list pane has two selections, one for creating a new station and the other for deleting the currently selected station.

Selecting the delete option will result in the selected item being deleted.

Selecting the create option will result in a series of prompters as follows:

- enter the name of the station to be added in the first prompter and press return
- enter the new station's address in the second prompter and press return
- enter a comment in the third prompter and press return

The list pane is then updated with the new station name. The selection of cancel for the first and second prompter will result in the creation process being stopped, but the selection of cancel on the comment prompter will result in no comment and the create

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process will complete.

If a MEROD address that has been set in the EWCC Configuration Browser is deleted from this browser and the browser is closed, the address will automatically be added when the MEROD Address Configuration Browser is re-opened.

2.1.5 Reports Browser

The Reports Browser software is common to all of the EWC3I stations and provides the interface to the MERODs for communications between the EWC3I stations. This browser shows all incoming and outgoing reports of the EEW. It provides the capability to create and send reports as well as browse and send reports created by other EEW tools. When incoming reports are received, the browser is automatically updated to show the new report. The reports browser is opened by selecting the "report preparation" menu item from the EWCC EWC3I Workstation sub-menu of the main system menu. The Reports Browser user interface and functionality are fully described in section 2.2.

2.1.6 Tactical Map Browser

The Tactical Map Browser provides access to most of the functionality of the EEW software. All of the EEW tools and the tasking tools for the DF stations and Jammers are accessed through the main menu of the Tactical Map Browser. This browser is opened by selecting the "open Tactical Map Browser" menu item from the EWCC EWC3I Workstation sub-menu of the main system menu. The Tactical Map Browser user interface and functionality are fully described in section 2.3.

2.1.7 Database Save

The friendly database contains data for all friendly force information that has been entered into the EWCC Map Browser. This database is stored in a class variable in the EWCC software. The database save function allows the user to save the database to a file so that even when the DfacttEWCC class is re-initialized, the database is not lost. This also provides the ability to transfer a database from one computer to another. The database save function is executed when the "save friendly database to file" menu item is selected from the EWCC EWC3I Workstation sub-menu of the system main menu.

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2.1.8 Database Load

When a friendly database is saved to a file as described above, the database may be loaded into the EWCC friendly database at any time in the future that the EEW is shut down. This is done by selecting the "load friendly database from file" menu item from the EWCC EWC3I Workstation sub-menu of the system main menu. The user will be asked to confirm that they wish to replace the database and then are prompted for the filename of the database that is to replace the current friendly database.

2.2 Reports Browser

The Reports Browser (see figure 2.2-1) is invoked by performing the following:

1. Select the EWCC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "report preparation" menu item

The browser is composed of three panes:

- a list pane of all reports and their send/receive state
- basic report information
- text

The list pane menu will allow the user to perform the following functions:

- print the selected report
- save the selected report to disk
- send the selected report over the merod to the default address
- send the selected report to other MEROD station(s)
- delete the selected report (from the report database and disk)

The report keys in the list pane of the Reports Browser are coded strings that indicates the state of the report. The key string includes the following fields:

- Receive State
- Send State
- Print State
- Type Code
- Date Time Group

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The receive, send and print states are indicated by the letters "R" (if the report has been received), "P" (if the report has been printed) and "S" (if the report has been sent) respectively and are separated by a "|". If a state is false for the report a blank or " " will appear between the separators.

The valid type codes and their associated types are as follows:

ADM	Administration Report
DAT	DF Alert Tasking Report
DF	DF Report
DMT	DF Movement Tasking Report
DTR	DF Tasking Report
DTT	DF Tasks Tasking Report
EWS	EW Summary Report
JMT	Jammer Movement Tasking Report
JTR	Jammer Tasking Report
JTT	Jammer Tasks Tasking Report
ORD	Orders
TAC	Tactical Report
TXT	Text Report

The sending of a report to other MEROD stations will result in a multiple list chooser being displayed. The report is sent to all addresses selected in the chooser when the "OK" button is selected. If the "CANCEL" button selected the send is cancelled.

The basic report information panes (To,From,Op name, and Classification) cannot be edited after a report has been saved.

The text pane menu allows the user to perform the following functions:

- basic text edit functions (restore, copy, paste, search)
- create a report of a certain type (administration, EW summary, orders, tactical, and text report)
- save created or changed report to disk
- browse contents of disk

A new report can only be created when no report is currently selected in the list pane. When the "create a report of type" menu item is selected the user is prompted to select the type of report from a list displayed. If the cancel button is selected or if no type is selected the creation of a new report is stopped. When a type is selected and the "OK" button is pressed a new report is displayed. The To, From, Op Name and Classification panes are initialized to the default states from the EWCC Configuration Browser. The

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defaults may be changes by editing these panes before the report is saved.

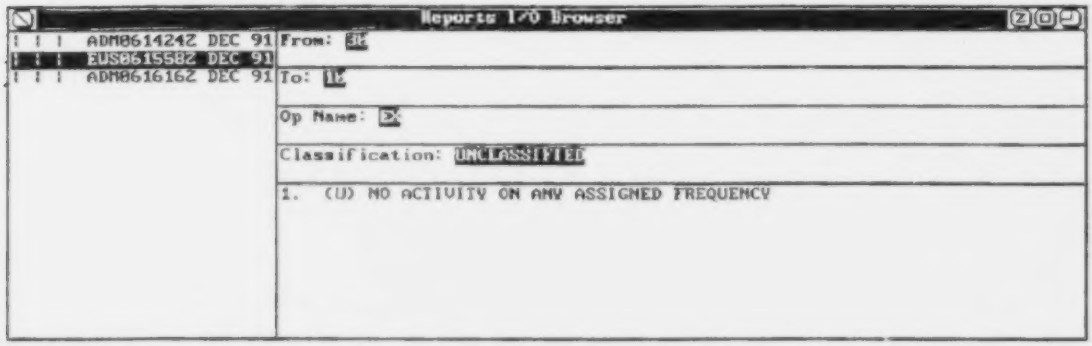

Figure 2.2-1
Reports Browser

2.3 EWCC Map Browser

The EWCC Map Browser is made up of a Tactical Map which provides the map display, and a text pane which provides parametric information on stations that are selected on the Tactical Map.

The Tactical Map main menu called the 'grid menu' provides access to all of the EWCC functions and tools. These functions or tools are:

a. Select map database
b. Set map scale
c. Scroll to location
d. Add DF Station
e. Add Jammer
f. Add Rx (FEWOC/EWOC/EWCC/enemyRx/enemyTx)
g. Add Intercept Rx
h. Move Selected Icon
i. Remove Selected Icon
j. Distance Between 2 Selected Icons
k. Browse Reports from Selected Icon

Each of the graphic icons also has a sub-menu which can be brought up by placing the cursor over an icon and pressing the right mouse button. The functions provided in the

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icon menus allow the user to change the attributes or parameters that were entered at time of addition of the object to the database and the Tactical Map. All functions that change the attributes of the object also effect the change to the object in the friendly database. The icon menus also offer a move icon function and a display path loss to another icon function. The move icon function provides the same functionality as the "move selected icon" menu item of the Tactical Map menu described in section 2.3.8. The "Display Path Loss to Selected Icon" displays the path loss from the icon, for which the menu was brought up, to an icon that is selected on the Tactical Map. The path loss function is enabled when only one icon is selected on the Tactical Map and it is not the same as the icon for which the menu is brought up.

2.3.1 Select Map Database

The map data base is a digital map created by scanning an actual paper map. This database is used as the background in the Tactical Map. The selection of the "select map database" menu item causes the user to be prompted for the filename of the map database to be loaded. The default map is the map of DREO and surrounding area. The file is called 'DREO.MDB'.

2.3.2 Set Map Scale

The selection of the "set map scale" menu item of the Tactical Map main menu causes the user to be prompted for the desired map scale. The available scales are: 1:25,000, 1:50,000, 1:100,000 and 1:250,000. The selection of a scale will bring up the loaded map in that scale. If the map has not been created at the scale selected, the map will not be displayed but the UTM grid and any stations added to the database will be displayed at the appropriate scale on the Tactical Map.

2.3.3 Scroll to Location

The selection of the scroll to location menu item causes the user to be prompted for the location in UTM coordinates that are to be used to center the Tactical Map.

2.3.4 Add DF Station

The selection of the "add DF Station" menu item adds a new DF Station object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box and a

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Dialog Prompter. The user interface prompts for the initialization values of the DF Station object. A Transceiver Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Transceiver Name
b. Frequency (MHz)
c. Modulation
d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of 'OK' in the Transceiver Parameter Prompter, the Dialog Box is closed and a Dialog Prompter is brought up prompting the user for a "true" or "false" answer to whether the DF Station to be added is the master station or not. The default value is "false". When "OK" is selected in the Dialog Prompter, a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the transceiver (DF Station) at that location. A DF Station Icon is displayed at the chosen position and a new DF Station object is added to the friendly database.

The selection of the DF Station Icon (placing the cursor over the icon and pressing the left mouse button) will cause a description of the DF Station parameters to be displayed on the text pane.

2.3.5 Add Jammer

The selection of the "add Jammer" menu item adds a new Jammer object to the database and allows the user to place it at any position on the map. The user must input initialization information for the Jammer through two customized Dialog Boxes. The user interface prompts for the initialization values of the Jammer object. A Jammer Parameter Prompter is opened requiring the user to fill in the following parameters for the jammer emitter:

a. Jammer Name
b. Jammer Frequency (MHz)
c. Jammer Modulation
d. Target Bearing (deg)

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e. Jammer BW (KHz)
f. Jammer Transmitted Power (W)
g. Jammer Antenna Height (m)
h. Jammer Antenna Gain (dB)

When "OK" is pressed the Jammer Parameter Prompter is closed and a Transceiver Parameter Prompter is opened to prompt the user for the communications transceiver parameters. This prompter requires the user to fill in the following parameters:

a. Transceiver Name
b. Transceiver Frequency (MHz)
c. Transceiver Modulation
d. Transceiver BW (KHz)
e. Transceiver Transmitted Power (W)
f. Transceiver Antenna Height (m)
g. Transceiver Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of 'OK' in the Transceiver Parameter Prompter, the Dialog Box is closed and a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the Jammer at that location. A JammerIcon is displayed at the chosen position and the Jammer object is added to the friendly database.

The selection of the Jammer (placing the cursor over the Jammer icon and pressing the left button) will cause a description of the Jammer and Transceiver parameters to be displayed on the text pane.

2.3.6 Add Transceiver

The selection of the "add Transceiver" menu item adds a new Transceiver object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box and a List Chooser. The user interface prompts for the initialization values of the Transceiver object. A Transceiver Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Transceiver Name
b. Frequency (MHz)
c. Modulation

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d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of "OK" in the Transceiver Parameter Prompter, the Dialog Box is closed and a List Chooser is opened prompting the user for the type of Transceiver. The valid types are: "FEWOC", "EWOC", "EWCC", "EnemyRx" and "EnemyTx". When the type is chosen and "OK" is selected in the List Chooser, a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the transceiver at that location. A Transceiver Icon is displayed at the selected position if the type chosen was "FEWOC", "EWOC" or "EnemyTx". An EWCCIcon is displayed if the type selected was "EWCC" and a ReceiverIcon is displayed for type "EnemyRx". The Transceiver object is added to the friendly database.

The selection of the transceiver (placing the cursor over the icon and pressing the left button) will cause a description of the transceiver parameters to be displayed on the text pane.

2.3.7 Add Intercept Receiver

The selection of the "add Intercept Receiver" menu item adds a new Receiver object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box. The user interface prompts for the initialization values of the Receiver object. A Receiver Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Receiver Name
b. Frequency (MHz)
c. Modulation
d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)

Upon the selection of 'OK' in the Receiver Parameter Prompter, the Dialog Box is closed

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and a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the Receiver at that location. A Receiver Icon is displayed at the chosen position and the Receiver object is added to the friendly database.

The selection of the Receiver (placing the cursor over the Receiver icon and pressing the left button) will cause a description of the Receiver parameters to be displayed on the text pane.

2.3.8 Move Selected Icon

The Move Selected Icon function is used to change the position of the selected icon on the Tactical Map and in the friendly database. This option is enabled when only one icon is selected on the Tactical Map. The selection of the Move Selected Icon menu item causes a cross hair cursor to be brought up on the Tactical Map. The user positions the cursor with the mouse to the position that the icon is to be moved to and presses the left button to effect the move. The text pane is updated with the new position displayed in the description text.

2.3.9 Remove Selected Icon

The Remove Selected Icon function removes the selected icon from the Tactical Map and the friendly database. This option is enabled when only one icon is selected on the Tactical Map. When the icon is removed, the text pane is updated with the empty string (blank) and no icon is left selected on the Tactical Map.

2.3.10 Distance Between Two Selected Icons

This function displays the straight line distance in kilometres between two selected icons. This function is enabled only when exactly two icons are selected on the Tactical Map. The distance is displayed in the text pane.

2.3.11 Reports From Selected EW Station Browser

The Reports From Selected EW Station Browser is used by the EEW user to browse incoming reports from other EW Stations. The browser is invoked for a single EW Station that is selected on the Tactical Map and lists all of the reports that have been received by the EEW from that station. The browser is composed of two sections; a list pane and a

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text pane. The list pane lists the reports with the report type code and date time group displayed for each report. The text pane displays the text for the report selected in the list pane. The report type codes are the same as for the Reports Browser (see section 2.2). The Reports From Selected EW Station Browser is automatically updated when reports are received from the EW Station for which the browser is opened. The browser's list pane menu allows the user to print the selected report. The Reports From Selected Icon Browser is shown in figure 2.3.11-1.

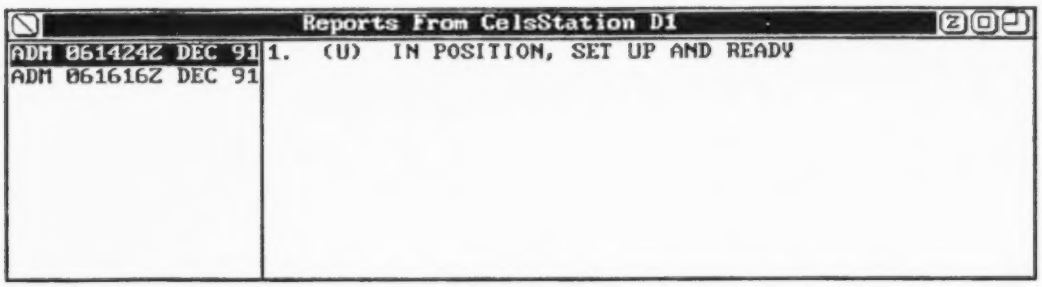

Figure 2.3.11-1
Reports From EW Station Browser

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The EWCC EWC3I Workstation provides a tactical Map Display on which the user can record the position and parameters of the friendly EW stations and reports tools that display incoming reports and generate, display and send outgoing reports between EW Stations.

This document describes the functionality and user interface of the EWCC EWC3I Workstation.

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